National Institute of
Nursing Research

Division of Intramural Research

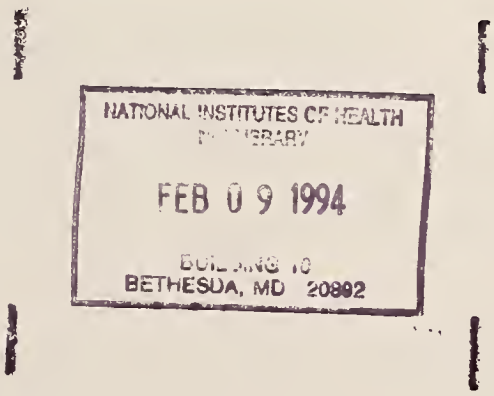
Annual Report

FISCAL YEAR
1993

OCTOBER 1, 1992 –
SEPTEMBER 30, 1993

U.S. Department of Health and
Human Services
Public Health Service
National Institutes of Health

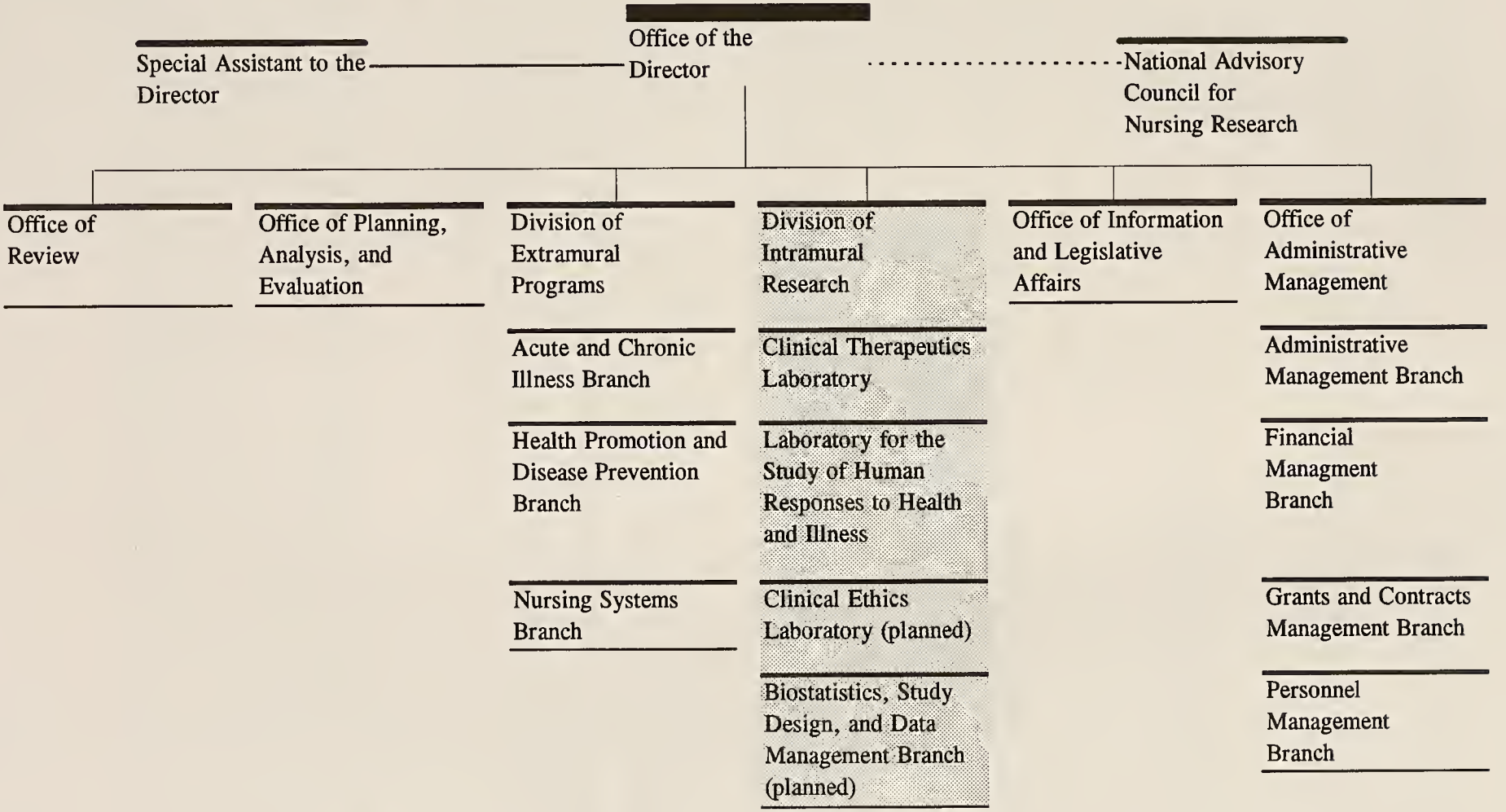
Annual Report of the Division of Intramural Research
National Institute of Nursing Research
National Institutes of Health
Fiscal Year 1993



Annual Report of the Division of Intramural Research
National Institute of Nursing Research
National Institutes of Health
Fiscal Year 1993

Table of Contents

National Institute of Nursing Research



OVERVIEW OF THE LABORATORIES OF THE DIVISION OF INTRAMURAL RESEARCH

Aims of the NINR Intramural Program

- Develop and conduct programs of research relevant to nursing practice and health care.
- Provide training for nurse scientists.
- Disseminate research findings for nursing practice.

Clinical Therapeutics Laboratory [CTL] *(Existing)*

Responsible for a scientific program that studies the biophysiologic and behavioral basis for and the effectiveness of clinical therapeutics relevant to nursing practice and health care, including, but not limited to, the study of:

- Prevention, detection, and treatment of symptoms occurring as a result of diseases, health conditions, or injuries;
- Prevention, identification, and treatment of side effects occurring as a result of treatment of illness, health conditions, or injuries;
- Processes and factors that increase compliance with prevention, diagnostic, or therapeutic regimens and health-related recommendations; and
- Mechanisms and approaches that improve safe and effective administration of therapies.

Laboratory for the Study of Human Responses to Health and Illness [HRHI] *(Existing)*

Conducts a scientific program regarding the biophysiologic and behavioral aspects of human responses that occur in health and illness, including

- Processes, mechanisms, and environments that influence health, and health-promoting and health-maintaining behaviors;
- Interventions that reduce the risk of illness, as well as minimize impairments or complications that result from disease, health conditions, or injuries; and
- Interventions that facilitate adaptation to illness or disability.

Clinical Ethics Laboratory *(Planned)*

Responsible for a scientific program that studies the ethical bases of and framework for nursing practice and health care delivery, including but not limited to, the study of:

- Particular ethical questions that face patients and families in health care situations or as participants in clinical research;
- The decision-making process utilized by nurses and other health care professionals in resolving ethical dilemmas and questions that arise in practice;
- The ethics-related consequences of decisions, practices, or policies made by nurses, other health care professionals, or health care institutions; and
- Processes, factors, or environments that influence the ethical practice of nursing or delivery of health care.

Biostatistics, Study Design, and Data Management Branch *(Planned)*

- Provides expertise and leadership regarding study design, data management, and statistical analysis for major activities of the Division of Intramural Research, involving the design, conduct, monitoring, and statistical analysis of intramural studies of:
  (a) the biophysiologic and behavioral basis for the effectiveness of clinical therapeutics relevant to nursing practice and health;
  (b) the biophysiologic and behavioral aspects of human responses that occur in health and illness; and
  (c) the ethical bases of, and framework for, nursing practice and health care delivery;
- Develops new research designs, as well as statistical and biometric methods, related to the research initiatives of the intramural programs;
- Maintains computerized data collection systems for intramural studies; and
- Works closely with interested laboratories to improve data management.

Division of Intramural Research Personnel

Acting Scientific Director	Ada Sue Hinshaw, PhD, RN
Associate Director for Intramural Research	Mary E. Ropka, PhD, RN

Clinical Therapeutics Laboratory

Acting Chief	Mary E. Ropka, PhD, RN
Staff Fellow	Mary H. Palmer, PhD, RN
Research Associate	Christine Grady, MD, RN
Senior Research Nurse Specialist	Robin E. Anderson, MBA, RN
Senior Research Nurse Specialist	Karen D. Hench, MS, RN

Laboratory for the Study of Human Responses to Health and Illness

Chief	Carolyn L. Murdaugh, PhD, RN
Senior Staff Fellow	Nancy Kline Leidy, PhD, RN
Research Nurse	Sakineh Walther, RN

History of the Division of Intramural Research

The National Center for Nursing Research (NCNR) was authorized under the Health Research Extension Act of 1985 and created as an entity at the National Institutes of Health in April of 1986. In June of 1993, the NCNR was redesignated the National Institute of Nursing Research (NINR), the 17th Institute of NIH. The mission of the NINR is "Science to strengthen nursing practice and health care that promotes health, prevents disease, and ameliorates the effects of illness and disability". As such, it fits well with the overall mission of the National Institutes of Health (NIH). The NINR is the NIH focal point for the development, conduct, and support of biomedical and behavioral research and research training programs pertaining to nursing practice. NINR-supported research contributes to the health of all Americans by improving nursing practice through promoting health and preventing disease, understanding and mitigating the effects of acute and chronic illnesses and disabilities, and improving patient care as well as the environment in which it is delivered. Similar to each of the other Institutes, Centers, and Divisions (ICDs) at the NIH, the NINR receives its annual appropriation from Congress, which has grown from $15.9 million in Fiscal Year (FY) 86 to $48.5 million in FY93.

When the NINR was created at the NIH, its initial activities were extramural in nature, utilizing grants and contracts to fund nursing research and research training activities conducted at academic and research institutions around the United States. NINR extramural programs are located organizationally within the NINR in the Division of Extramural Programs, which has three branches: the Acute and Chronic Illness Branch, the Health Promotion/Disease Prevention Branch, and the Nursing Systems Branch. Diverse NIH extramural funding mechanisms, ranging from the traditional RO1 to various Career Development Awards, are utilized to fund extramural nursing research and research training at many sites.

Shortly after Ada Sue Hinshaw, PhD, RN was appointed as the first Director of the NCNR, she identified five long-range planning priorities for the first five years (1988-1992) of NCNR's development. They included: (1) Develop a National Nursing Research Agenda (NNRA); (2) Establish a career trajectory for research training and career development; (3) Develop an intramural research program; (4) Facilitate collaboration with other scientific disciplines; and (5) Develop an international nursing research program. These priorities were revised to provide continued guidance in the second five years (1993-1998) as follows: (1) Advance scientific opportunities while attaining a balance among research requirements for nursing practice, society's health needs, and resources; (2) Direct the evolution of a National Nursing Research Agenda to identify and project nursing research priorities; (3) Augment the career trajectory for nursing research training and career development; (4) Strengthen NINR's intramural scientific and research training programs, structure, and resources; (5) Disseminate research results to nursing/interdisciplinary scientific and practice communities, as well as the public; and (6) Broaden international networks for advancement of nursing research.

To target scientific endeavors and resources in order to ultimately foster excellence in science, the National Nursing Research Agenda (NNRA) was launched and provided a process for identifying research priorities. The research priorities identified in 1988 for the first phase of the NNRA included:

- Low Birthweight: Mothers and Infants
- HIV Infection: Prevention and Care
- Long Term Care for Older Adults
- Symptom Management: Pain
- Nursing Informatics: Enhancing Patient Care
- Health Promotion for Older Children and Adolescents
- Technology Dependency Across the Lifespan

Two of the first phase NNRA priorities identified, "HIV Infection: Prevention and Care" and "Symptom Management", along with two of the Director's first five year long-range objectives, "Develop an intramural research program" and "Facilitate collaboration with other disciplines", provided part of the impetus for the initiation of NINR's intramural research program. Even while formal long range planning for NINR's HIV infection and AIDS research program was ongoing through its NNRA process, NINR, along with other institutes of the NIH and the U.S. Public Health Service, was responding through its extramural program to the HIV infection epidemic that presented a critical and devastating health problem in the United States. To complement NINR extramural HIV initiatives, the NINR initiated planning late in 1988 for an HIV infection intramural program, "The Collaborative Intramural Program for HIV Infection" (CIPHIV), conducted in collaboration with the National Institute of Allergy and Infectious Diseases (NIAID). This initial NINR intramural research effort was targeted to individuals infected with HIV who were already participating in studies conducted at the NIH Clinical Center by intramural investigators of the NIAID. Its aim was to conduct an organized program of research that would increase understanding of, as well as develop nursing interventions for, health problems that are particularly prevalent among or troublesome to the individual infected with HIV, his/her family, or caregivers. The ultimate goal was to minimize dysfunction and suffering due to physical or psychosocial sequelae of HIV infection. This early program, conducted out of the Office of the Director, NINR, provided the foundation for the current Clinical Therapeutics Lab.

Building on the scientific and organizational structure provided by the initial HIV intramural program, NINR's intramural research efforts expanded to involve aging research. A second small NINR intramural research program was developed in 1991 that involved nursing research in aging conducted with the Honolulu Aging Asian Study in Honolulu, Hawaii. The Honolulu Heart Study (HHS) is a longterm longitudinal epidemiologic study conducted by the National Heart, Lung, and Blood Institute (NHLBI) for which the cohort was initially established in 1965. As the original NHLBI HHS cohort has aged, individual participants who developed dementia were given the opportunity to participate in the Honolulu Aging Asian Study (HAAS), conducted by the National Institute on Aging (NIA). The NINR study investigates caregiver burden and quality of life in the female caregivers of these aging Asian male participants who have developed dementia.

The NINR intramural program was designed to complement the traditional biomedical research already conducted at the NIH through efficiently using valuable NIH resources, such as patient care and office space; clinical, biophysiologic, and psychosocial patient information; and scientific and research support personnel. The existing intramural program environment of the NIH presents a unique opportunity for NINR investigators to conduct research that will improve nursing care and health. The intramural programs of the NIH provide: (1) an environment for science in which clinical and basic researchers enjoy the benefits of "an innovative research hospital that facilitates the freest communication between laboratories and clinics and between creative investigation and practical application"; (2) opportunities for interchange and collaboration on a daily basis with other NIH scientists who bring diverse expertise; and (3) the ability to focus on research without extensive teaching, health care delivery, or grantwriting responsibilities. In addition, the NIH Intramural Program setting encourages research unlikely to provide quick pay-offs and has the capacity to provide a meaningful response to national health emergencies (Report of the President's Biomedical Research Panel, 1976).

NINR's intramural program was formally acknowledged by the creation of the Division of Intramural Research when the entire NINR organizational structure was updated in 1992 . The overall aims of the Division of Intramural Research (DIR) are to: (1) Develop and conduct programs of research relevant to nursing practice and health care; (2) Provide training for nurse scientists; and (3) Disseminate research

findings for nursing practice. Designation of the Division of Intramural Research also resulted in the creation of two laboratories, the Clinical Therapeutics Laboratory (CTL) and the Laboratory for the Study of Human Responses to Health and Illness (HRHI), which evolved from the early CIP research programs. While each laboratory has a separate research program, both laboratories address the interaction of biological and behavioral aspects of health and disease as well as emphasize an interdisciplinary approach through partnerships with other disciplines and Institutes.

From the early HIV collaborative program, the CTL has evolved into a scientific program that studies the biophysiologic and behavioral basis for and the effectiveness of clinical therapeutics relevant to nursing practice and health care, including, but not limited to, the study of:

- Prevention, detection, and treatment of symptoms occurring as a result of diseases, health conditions, or injuries;
- Prevention, identification, and treatment of side effects occurring as a result of treatment of illness, health conditions, or injuries;
- Processes and factors that influence compliance with prevention, diagnostic, or therapeutic regimens and health-related recommendations; and
- Mechanisms and approaches that improve safe and effective administration of therapies.

Developing from the early Honolulu Study, the HRHI Laboratory conducts a program of research which focuses on biophysiologic and behavioral aspects of human responses that occur in health and illness, including:

- Biophysiologic and behavioral processes that influence health-related quality of life outcomes in illness or disability;
- Processes and environments that influence health, and health-promoting and health-maintaining behaviors;
- Interventions that reduce the risk of illness as well as minimize impairments or complications that result from disease, health conditions, or injuries; and
- Interventions that facilitate adaptation to illness or disability.

CTL and HRHI programs are described in detail in the individual reports of the laboratory chiefs.

Tremendous progress has been made in a short period of time towards the development of both the scientific and organizational aspects of the NINR intramural research program. Review of the brief history of NINR's intramural program leads to the identification of several challenges that exist for the future: (1) developing depth in the science and programs of research, while remaining responsive to new opportunities and disease problems: (2) continued expansion of intramural studies to environments other than the NIH Clinical Center through collaboration with other NIH components and Federal agencies; (3) assuring adequate resources to support the evolving scientific programs, such as space, personnel, and fiscal resources; and (4) utilizing research training opportunities to develop nurse scientist who can then return to the extramural research setting.

Mary E. Ropka, PhD, RN

Report of the Director and Acting Scientific Director

These last several years have posed exciting and challenging opportunities for the development of the National Institute of Nursing Research's (NINR), Division of Intramural Research (DIR). In a short time, the research conducted by scientists in the DIR is being heard and critiqued by colleagues in the national and international nursing and interdisciplinary research communities; e.g., the American Nurses' Association, Council of Nurse Researchers, American Gerontological Society and the Annual International AIDS meetings. In FY1993, researchers from the NINR presented in the NIH Research Day poster program. Thus, research productivity is already evident from the NINR intramural programs.

In 1992, the formal organization of the DIR as an independent program within the Institute was approved with three laboratories and one support branch delineated; the Clinical Therapeutics Laboratory (CTL), the Laboratory for Human Responses to Health and Illness (HRHI), the Clinical Ethics Laboratory (CEL) and the Biostatistics, Study Design and Data Management Branch (BSB). The CTL and HRHI are open laboratories consisting of a senior investigator, one or more Staff Fellows and the necessary support staff such as research nurses and program analysts. The CEL and the BSB are planned entities for future development.

In June, 1993, the National Center for Nursing Research was redesignated as the National Institute of Nursing Research with the full authorities granted such National Institutes of Health entities. The authority to establish an Intramural Research Program was part of the original NCNR authorizing language but the formalization of the intramural program coincided with the redesignation process.

The independent intramural research programs are developed to be collaborative with other institute intramural programs with similar interests in terms of the research infrastructure surrounding the protocols. Excellent collaborative relationships for use of the research infrastructure have been developed with the National Institute of Allergy and Infectious Diseases (NIAID), the National Institute on Aging (NIA), the National Heart, Lung and Blood Institute (NHLBI) and the Departments of Nursing and Nutrition at the NIH Clinical Center.

The NINR intramural programs are designed to complement or extend the research conducted in the extramural nursing research community as well as take advantage of certain longitudinal studies conducted at NIH. In addition, the studies may be conducted in the intramural program if a cadre of expert scientists are available which will strengthen the science as well as increase the timeliness of its conduct.

The Division of Intramural Research has grown steadily for the past four years, from $231,000 in FY1990 to $1,025,604 in FY1993. The first eighteen months included the development of the structure and policies as well as recruiting the personnel to staff the new intramural program. Personnel have grown from 2 FTEs in FY1990 to an estimated FTE usage of 7.4 in FY1993.

The National Advisory Council for Nursing Research has monitored the developmental progress of the intramural program through yearly reports. Extensive support for the program and its needed growth in resources and staff has been consistently evident. As Director of the NINR, this enthusiasm and support for NIH's first totally new intramural research program is echoed with a resounding voice.

Ada Sue Hinshaw, PhD, RN

Summary of the Associate Director for Intramural Research

Promoting the health of the people of the Unites States is the responsibility of the National Institutes of Health (NIH) through the activities of its various Institutes, Centers, and Divisions (ICDs), including conducting research, training scientists, and disseminating new knowledge. Many such research, training, and information efforts that are both broad and diverse in their scope are ongoing throughout the NIH. Through its research initiatives, the National Institute of Nursing Research (NINR) contributes specifically by addressing society's need for knowledge to promote health and prevent disease and disability, as well as to respond optimally to acute and chronic illness through nursing practice.

In order to incorporate the full range of possible approaches that exist within the NIH to address societal health needs while also considering the nursing research priorities identified by the National Nursing Research Agenda, NINR has carefully developed its capabilities to conduct intramural research to complement existing NINR extramural programs. Rather than duplication, NINR intramural research programs provide a natural complement to the traditional biomedical studies already conducted at the NIH.

Development of the intramural program enables the NINR to incorporate the rich resources of the NIH intramural environment to address health problems fundamental to nursing practice. The NINR intramural program develops and conducts clinical research to promote knowledge for nursing practice and health care. Unique aspects of the NIH intramural environment which are being tapped for nursing research through the NINR intramural program include: (1) ability to conduct longterm high risk research without quick payoffs; (2) moving quickly from idea to implementation; (3) close proximity of basic and clinical research; (4) depth and breadth of expertise of potential collaborators; and (5) populations with unusual conditions or spectrum of disease. The ready willingness of individual investigators and other Institutes to collaborate have enabled NINR to leverage limited NINR intramural resources into an efficient and economical program for which modest continued growth is expected.

The evolving intramural research programs of the NINR are an exciting scientific opportunity for nursing research to contribute to science and improved health.

Mary E. Ropka, PhD, RN

Clinical Therapeutics Laboratory
Table of Contents

Summary of the Laboratory Chief

The Clinical Therapeutics Laboratory (CTL) is responsible for a scientific program that studies the biophysiologic and behavioral basis for and the effectiveness of clinical therapeutics relevant to nursing practice and health care. Its scientific program includes, but is not limited to, the study of:

- Prevention, detection, and treatment of symptoms occurring as a result of diseases, health conditions, and injuries;
- Prevention, identification, and treatment of side effects occurring as a result of treatment of illness, health conditions, or injuries;
- Processes and factors that increase compliance with prevention, diagnostic, or therapeutic regimens and health-related recommendations; and
- Mechanisms and approaches that improve safe and effective administration of therapies.

Attention to both the biophysiologic and behavioral aspects of these crucial clinical challenges, approached from an interdisciplinary perspective, is inherent in the studies of the CTL. Efficient and economical research operations result by conducting some NINR studies collaboratively with those of other Institutes, Centers, and Divisions (ICDs). Basic work related to definition, identification, measurement, or intervention can be conducted in the intramural environment which can serve as a foundation for future extramural initiatives. In addition to the conduct of research, the CTL will provide a resource for training nurse investigators who can then move to the extramural environment,

Scientific Advances

Symptom Management Research

Symptom management research programs that are currently conducted in the lab are targeted to two important groups, those with Human Immunodeficiency Virus (HIV) infection and the aging.

HIV Symptom Management Program. Because HIV infection has become a chronic disease rather than rapidly fatal and yet one for which there is no cure, the research efforts of the CTL are crucial. HIV symptom management research encompasses prevention, assessment, and treatment of symptoms resulting from HIV infection itself and its associated opportunistic infections (OIs) and opportunistic malignancies (OMs), in addition to prevention, identification, and treatment of OIs. HIV symptom management research spans not only medical diagnoses and treatments, but patient populations and settings. It provides a natural complement to traditional biomedical studies, such as those conducted at the NIH by other ICDs. Issues in HIV symptom management research that require attention include assessment of the multiple dimensions of symptoms or side effects, assurance of rigorous measurement, development and testing of effective treatments of HIV symptoms and side effects, and evaluation of the potential effects of symptom management measures and interventions on the outcomes of traditional biomedical clinical trials.

Two CTL symptom management studies are currently conducted in the area of HIV infection. One study, initiated in July of 1990, examines nutritional problems that occur during treatment for HIV infection, and explores the relationship of nutritional status to immune function. Increased understanding of the

nature, extent, and timing of nutritional problems occurring during treatment for HIV infection provides a foundation for improved ability in future CTL studies to target intensive nutritional assessment and treatment to those at greatest risk in order to ultimately improve duration and quality of survival. This study will also provide longitudinal investigation of the relationship of nutritional status and immune function, which has never been adequately addressed in general or specific to HIV infection. Extending current work, a nutrition intervention study is under development by NINR CTL investigators and Clinical Center Nutrition Department nutritionists to test the effects of medium chain triglyceride supplements on weight loss in HIV infection. All of the HIV symptom management studies benefit from close collaboration and resource sharing with other ICDs, including NIAID and National Institute of Neurologic Disorders and Stroke (NINDS), and with the Clinical Center, especially the Nursing Department and the Nutrition Department.

A second CTL symptom management study, begun in May 1991 in response to a newly observed clinical problem, describes, compares, and contrasts over time the biopsy characteristics; serum biochemical features; and condition-specific clinical performance, physical functioning, and health perceptions of patients who develop myopathy during prolonged antiretroviral therapy for HIV infection. It evaluates effectiveness of clinically-determined interventions, such as non-steroidal anti-inflammatory medications or changes in antiretroviral dose or drug. This study also includes basic work in developing practical, clinically useful measures of physical function and condition-specific health status which is especially important to studying the consequences of a chronic disease such as HIV infection and its treatment. In addition, CTL staff recently began collaboration on a myopathy intervention study that builds on the earlier NINR observational study and is conducted by NINDS investigators who were collaborators on the NINR study. The effectiveness of L-carnitine in improving myopathy is tested in a clinical trial that includes fatigue and physical function as outcome measures.

In response to identified opportunities for NINR to address numerous challenges in HIV Symptom Management, a multiple phase CTL research program is underway. It includes evaluation of the nature, extent, and impact of HIV symptoms and side effects across the spectrum of HIV infection and its treatment, in addition to studies testing interventions for targeted HIV symptoms or side effects.

Aging Symptom Management. Complementing the initial HIV program, symptom management work was expanded. Two additional CTL studies examine symptom problems among the aging. Incontinence is a common and costly health problem which demands nursing interventions to promote functional and psychological well-being. A newly initiated CTL clinical trial tests effectiveness of estrogen cream alone or in combination with behavioral interventions on incontinence status and urinary symptoms in post-menopausal women. Presence of urgency symptoms and patient report of quality of life are included as outcome measures. Optimization of the physiological environment to enhance behavioral interventions builds on the recommendations of recent Agency for Health Care and Policy Research (AHCPR) practice guidelines for incontinence that suggest combined therapies in the treatment of incontinence. A second CTL aging symptom management study examines and compares the effectiveness of a prompted voiding nursing intervention on level of dryness of nursing home residents.

Compliance Research Program

Compliance with prevention, diagnostic, or therapeutic regimens is a second focus of CTL studies. This research combines biophysiologic and behavioral concepts to provide an important complement to ongoing HIV clinical trials and potentially maximizes safe and effective medical treatments. CTL investigators are collaborating with the NIAID to study the extent of compliance with HIV treatment regimens and related factors during clinical trials through companion studies conducted both in the HIV Clinic at the NIH Clinical Center and at the Community Program for Clinical Research in AIDS (CPCRA) sites around the country. These studies will provide a basis for planning targeted compliance interventions to improve adherence with HIV treatment recommendations. In addition, at the request of the NIAID for their expertise, NINR investigators provide a strong leadership role for integrating symptom management research and compliance research into the biomedical antiretroviral and opportunistic infection research agendas of the CPCRA.

Significant Administrative Events

The CTL was established early in 1992 by the creation of the Division of Intramural Research (DIR) in the then National Center for Nursing Research (NCNR). This change in organizational structure reflected the growth that had occurred since the NCNR was established in 1986. Formation of the CTL evolved from the initial intramural NINR program, which was begun in 1990 as a collaborative HIV research program conducted with the National Institute of Allergy and Infectious Diseases (NIAID).

Honors and Awards

The following awards or honors were received by CTL staff during this Fiscal Year: Robin Anderson, MBA, RN was assimilated into the USPHS Regular Corps and received a USPHS Achievement Medal; Christine Grady, M.S., RN received the First Annual Faye Abdellah Publication Award; Karen Hench, M.S., RN received a Director's Award, National Health Service Corps and a USPHS Achievement Medal; Mary Palmer, Ph.D., RN was elected to Fellowship in the American Academy of Nursing and received the Excellence in Nursing Award, Sigma Theta Tau, Pi Chapter; and Mary Ropka, Ph.D., RN was elected to Fellowship in the American Academy of Nursing.

Mary E. Ropka, PhD, RN

Individual Project Reports

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER

Z01 NR00001-04 CTL

PERIOD COVERED

October 1, 1992 to September 30, 1993

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*

Nutritional Changes During HIV Treatment, Relation to Immune Function (90-I-156)

PRINCIPAL INVESTIGATOR *(List other professional personnel below the Principal Investigator.) (Name, title, laboratory, and institute affiliation)*

PI: Mary E. Ropka, Associate Director for Intramural Research, NINR

Others: Robin Anderson, Senior Research Nurse, CTL/NINR

Christine Grady, Research Associate, CTL/NINR

COOPERATING UNITS *(if any)*

1. LIR/NIAID
2. Clinical Center Department of Nursing
3. Clinical Center Nutrition Department (N. Sebring, C. Hayes)

LAB/BRANCH

Clinical Therapeutics Laboratory (CTL)

SECTION

INSTITUTE AND LOCATION

NINR, NIH, Bethesda, MD 20892

TOTAL STAFF YEARS:	PROFESSIONAL:	OTHER:
1.0	1.0	

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither

☐ (a1) Minors

☐ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

This study **aims** to: (1) Describe the type and extent of changes in nutritional status that develop across the spectrum of HIV infection during its treatment, including etiology of nutritional changes and adequacy of nutritional intake; changes in body composition by weight and other anthropometric measures and bioelectrical impedance analysis (BIA); biochemical parameters associated with nutritional status or suggested to be associated with HIV infection (cholesterol, triglycerides, vitamin B12, and folate); and (2) Explore the extent to which nutritional status serves as a cofactor to impaired immune function during HIV infection and its treatment. The effect of timing and pattern of collecting dietary intake information on diversity of reported intake and dependability of reporting is also determined.

Initiated in July 1990, the study employs an initial cross-sectional design, comparing different HIV disease severity groups determined by CD4 count and HIV treatment protocols, combined with a longitudinal design, involving follow-up of subjects at monthly intervals for the first eight months and then at decreasing intervals. Recruitment was completed in May 1992, including 120 subjects of whom 13 were females.

In response to early observations regarding the absence of anticipated measurable levels of Tumor Necrosis Factor (TNF), two substudies were conducted in collaboration with LIR/NIAID. In addition, two other substudies were conducted. The first evaluated the consequences of the observed inability of subjects to not eat or drink prior to BIA on the accuracy of body composition estimates by BIA. The second measured energy consumption by indirect calorimetry in order to validate estimates of energy requirements used in standard clinical practice with these more precise indirect calorimetry measures.

Title:
"A Combined Cross-Sectional and Longitudinal Study to Evaluate Nutritional Changes Occurring During Treatment for HIV Infection, and Their Relationship to Immune Function" (#90-I-156)

Principal Investigator:

Mary E. Ropka, PhD, RN	Associate Director for Intramural Research/NINR

Other Investigators:

Robin Anderson, MBA, RN	Senior Research Nurse Specialist/NINR
Bill Barrick, MS, RN	Head Nurse, 8th Floor Clinic/CCND
Judith Falloon, MD	Senior Investigator/NIAID
Christine Grady, MS, RN	Research Associate/NINR
Karen Hench, MS, RN	Senior Research Nurse Specialist/NINR
H. Clifford Lane, MD	Clinical Director/NIAID
Joseph A. Kovacs, MD	Senior Investigator/CCMD
Julie Metcalfe	Biologist/NIAID
Michael A. Polis, MD, MPH	Senior Investigator/CCMD

Major Aims:
The purposes of this study are to:

1.0 Describe the type and extent of changes in nutritional status, both nutritional excesses and deficits, that develop across the spectrum of HIV infection during its treatment.
  1.1 Determine the etiology of nutritional changes by assessing the adequacy of nutritional intake in terms of calories and protein, altered digestion and absorption, metabolic changes, and extent of excessive nutrient loss.
  1.2 Evaluate body composition, including the composite measure of weight (WT); body fat by skinfold measures (SF) and bioelectrical impedance analysis (BIA); and lean body mass by midarm circumference (MAC) and bioelectrical impedance analysis (BIA).
  1.3 Examine biochemical parameters associated with nutritional status, including serum albumin, transferrin, and prealbumin.
  1.4 Examine biochemical parameters suggested to be associated with HIV infection, including cholesterol, triglycerides, vitamin B12, and folate.

2.0 Explore the extent to which nutritional status serves as a cofactor to impaired immune function during HIV infection and its treatment by determining the relationship of changes in nutritional status to changes in immune function. Measures reflecting immune function include T-cell subsets, immunoglobulins, and cachectin (TNF-α).

3.0 SUBSTUDY #1 (planned at the time of the original NINR study): Evaluate the effect of collecting food record information on three consecutive days including one weekend day, as compared to three non-consecutive days including one weekend day, on variability of reported food intake and compliance with data collection.

Methods Employed:
Design: This study combines a cross-sectional, comparing different HIV disease severity groups, and a longitudinal design. HIV treatments are nested within NIAID drug protocols.

Sampling: The estimated sample size was 90 evaluable subjects, 30 from each of three HIV disease severity groups as determined by on-study CD4 counts. Recruitment was initiated in July of 1990 and completed by May 1992. 120 subjects (including 13 women) were systematically sampled from 3 HIV severity groups among subjects already participating in NIAID protocols: 31 from CD4 < 200 (0 females); 32 from CD4 200-500 (5 females); and 57 from CD4 > 500 (8 females).

Measurement: Study measures included:

- Anthropometric measures: body build, height, weight, skinfold measures, mid-arm circumference, bioelectrical impedance analysis
- Laboratory biochemical studies: serum albumin, serum transferrin, serum prealbumin, cholesterol, triglycerides, vitamin B12, folate
- Dietary intake: 24-hour record of dietary intake for 3 days the week prior to clinic visit.
- Immune function: T-cell subsets, blastogenesis, NK cell activity, immunoglobulins, TNF-α
- HIV viral activity: p24 antigen, HIV culture, PCR
- Nutrition-related symptoms: anorexia, nausea/vomiting, oral lesions (stomatitis), dysphagia/odynophagia, diarrhea, fatigue, dyspnea, fever

Major Findings and Report of Activities:

Since the study began, five substudies have been conducted as follows:

SUBSTUDY #1: (planned at the time of the original NCNR study): Evaluate the effect of collecting food record information collected on three consecutive days including one weekend day, as compared to three non-consecutive days including one weekend day, on variability of reported food intake and compliance with data collection. Data analysis is currently underway.

(12/91 - 1/92) SUBSTUDY #2 AND SUBSTUDY #3: (initiated in response to ongoing study findings or observations): To evaluate the absence of anticipated measurable levels of TNF-α, two substudies were conducted:

- 16 plasma samples from normal controls were spiked with varying concentrations of recombinant TNF-α and sent to our contract laboratory (SKB) for standard bioassay. TNF-α was measurable in the spiked samples;
- 10 plasma samples were examined in collaboration with Dr. Guido Poli (LIR/NIAID) for TNF-α levels by conventional bioassay as well as by incubation with chronically infected cell lines sensitive to TNF-α induction. No detectable levels of TNF-α were seen by either of the two methods.

These substudies were presented at the International AIDS meeting in Berlin in June 1993.

(6/92 - 9/92) SUBSTUDY #4: To evaluate the consequences of the observed inability of subjects to remain NPO prior to Bioelectrical Impedance Analysis (BIA), the effect of recent food intake on BIA estimates of body composition, specifically related to fluid and/or electrolyte balance, was investigated. BIA was obtained in 20 subjects participating in the Nutrition Study with diverse body builds: (1) upon arriving to clinic, in a fasting state; (2) one hour following consumption of a standardized breakfast; and (3) three hours following consumption of the standardized breakfast. This substudy was carried out in the Clinical Center 8th floor HIV Clinic in collaboration with Celia Hayes and Nancy Sebring, Clinical Center Nutrition Research Specialists. Data analysis is completed. This substudy was presented at the International AIDS meeting in Berlin in June 1993.

(9/92) SUBSTUDY #5: To compare energy requirements, estimated for clinical care by standard formulas, to measured energy requirements obtained by indirect calorimetry, 20 subjects were studied (7 from CD4 < 200 group, 6 from CD4 200-500, 7 from CD4 > 500 group) using the Sensor Medics Delta Trac Metabolic Monitoring System. The patients underwent indirect calorimetry after resting in a recliner for 30 minutes. Each patient had been instructed to fast (except for water and medications) since midnight the night before. Expired air was drawn in through a hood and sent through the Delta Trac System for analysis of CO_2 production, oxygen and breathing pattern. This substudy was carried out in the 8th Floor HIV Clinic, utilizing a metabolic cart loaned by the Clinical Center's Department of Critical Care Medicine. Data analysis is completed. This substudy was presented at the US Public Health Service Professional Association Meeting in Scottsdale, Arizona in May 1993.

Data collection for the cross-sectional phase is completed with analysis well underway. The longitudinal phase involves continued follow up of the 47 subjects remaining on study. We plan like to follow these individuals for as long as they return to clinic for their NIAID study visits in order to accomplish the aim of following change in nutritional status over time with different HIV therapies, as well as addressing the longitudinal effects of nutritional status on immune function in HIV infection.

Significance of Research for Biomedical Research & the Program of the NINR:
Increased understanding of the nature, extent, and timing of nutritional problems occurring in individuals during different treatments for HIV infection provides a foundation for improved ability to target intensive nutritional assessment and treatment to those at greatest risk in order to ultimately improve duration and quality of survival.

Proposed Future Course:
Data collection for the cross-sectional phase is completed with analysis underway. The longitudinal phase involves continued follow-up of all subjects continuing to participate.

Publications:
Ropka ME. Nutrition. In: Johnson BL, Gross J, eds. Handbook of oncology nursing. New York: John Wiley, in press.

Anderson R, Sebring N, Grady C, Hench K, Ropka M. Current nursing research in HIV infection: A cross-sectional study to evaluate nutritional changes occurring during treatment. Proceedings of the 27th annual meeting of the USPHS Professional Association, 1992;84.

Anderson R, Sebring N, Hench K, Grady C, Ropka M. A nursing investigation comparing reported protein-calorie intake to estimated energy expenditure in HIV infected patients. Proceedings of the 28th annual meeting of the USPHS Professional Association, 1993;81.

Ropka ME, Sebring N, Anderson R, Hayes C. Effect of nonfasting on accuracy of body composition estimates by bioelectrical impedance analysis in HIV infection. Proceedings of the IXth international conference on AIDS, 1993;528.

Ropka ME, Grady C, Anderson R. Non-Detectable Tumor Necrosis Factor-Alpha (TNF-α) in plasma during HIV treatment. Proceedings of the IXth international conference on AIDS, 1993;528.

Ropka ME, Grady C, Anderson R, Weissman D, Poli G. Non-Detectable Tumor Necrosis Alpha (TNF-α) in Plasma during HIV treatment. [Letter to the editor]. Journal of Acquired Immunodeficiency Syndrome, submitted.

Related Presentations:
"Effect of Non-Fasting in Accuracy of Body Composition Estimates by Bioelectrical Impedance Analysis (BIA) in HIV-Infection", Poster presentation at the IXth International Conference on AIDS, Berlin, Germany, June 8-10, 1993.

"Non-Detectable Tumor Necrosis Factor-Alpha (TNF-α) in Plasma During HIV Treatment", Poster presentation at the IXth International Conference on AIDS, Berlin, Germany, June 8-10, 1993.

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER

Z01 NR00002-03 CTL

PERIOD COVERED

October 1, 1992 to September 30, 1993

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*

Myopathy During Prolonged Antiretroviral Therapy for HIV Infection (91-I-142)

PRINCIPAL INVESTIGATOR *(List other professional personnel below the Principal Investigator.) (Name, title, laboratory, and institute affiliation)*

PI: Mary E. Ropka, Associate Director for Intramural Research, NINR
Others: Christine Grady, Research Associate, CTL/NINR
Karen Hench, Senior Research Nurse, CTL/NINR

COOPERATING UNITS *(if any)*

1. LIR/NIAID
2. MN/NINDS
3. Clinical Center Department of Nursing

LAB/BRANCH

Clinical Therapeutics Laboratory (CTL)

SECTION

INSTITUTE AND LOCATION

NINR, NIH, Bethesda, MD 20892

TOTAL STAFF YEARS:	PROFESSIONAL:	OTHER:
1.0	1.0	

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither
☐ (a1) Minors
☐ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

The two major **aims** of this study are to: (1) Describe and compare the histopathologic characteristics; serum biochemical features; and condition-specific clinical performance, functional status, and health perceptions of patients who have developed myopathy during antiretroviral therapy for HIV infection; and (2) Contrast the changes in histopathologic characteristics; serum biochemical features; and myopathy-related clinical performance, functional status, and health perceptions that occur over time, and following clinically-determined interventions such as altered antiretroviral doses, steroid administration, or nonsteroidal anti-inflammatory medications. In addition, it explores differences in responses to general and newly developed condition-specific items of an adapted version of the Short Form of the Medical Outcomes Study questionnaire (SF-36 MOS) in order to determine health perceptions and health status as judged by the patient.

A concurrent, prospective case series **design** is used which involves longitudinal measurement of most study variables at monthly intervals for the original six month duration of the study, with the exception of muscle biopsy which is performed at the beginning and then repeated once. One additional evaluation at around 12 months has been added. 25 evaluable subjects have been recruited, involving consecutive patients participating in NIAID HIV treatment trials who meet the study criteria, and followed for six months.

Laboratory studies performed at baseline and monthly for six months include: CBC with differential; Acute Care, Hepatic, and Mineral Panels; CK; LDH; Aldolase; Lactate; and Urinalysis. Clinical performance was evaluated at baseline and monthly for six months by manual muscle strength testing, while functional status was assessed by timed muscle activities and functional grade. Health perceptions and health status are measured by the MOS questionnaire. Data analysis is in progress.

Title:
"Histologic, Serologic, and Clinical Characteristics of Myopathy Occurring During Prolonged Antiretroviral Therapy for HIV Infection" (#91-I-142)

Principal Investigator:

Mary E. Ropka, PhD, RN	Associate Director for Intramural Research/NINR

Other Investigators:

Christine Grady, MS, RN	Research Associate/NINR
Marinos Dalakas, MD	Senior Investigator/NINDS
Karen Hench, MS, RN	Senior Research Nurse Specialist/NINR
Judith Falloon, MD	Senior Investigator/NIAID
Ed Cupler, MD	Clinical Associate/NINDS

Major Aims:
The purposes of this study are to:

1.0 Describe and compare the histopathologic characteristics; serum biochemical features; and condition-specific clinical performance, functional status, and health perceptions of patients who have developed myopathy during antiretroviral therapy for HIV infection.

2.0 Contrast changes in histopathologic characteristics; serum biochemical features; and myopathy-related clinical performance, functional status, and health perceptions that occur over time, and following clinically-determined interventions such as altered antiretroviral doses, steroid administration, or nonsteroidal anti-inflammatory medications.

3.0 SUBSTUDY #1: Explore differences in responses to general and newly developed condition-specific items of an adapted version of the Short Form Medical Outcomes Study (SF-36 MOS) to determine health perceptions and health status.

Methods Employed:
Design: This observational study is a concurrent, prospective case series involving longitudinal measurement of most study variables at monthly intervals for the six-month duration of the study, with the exception of muscle biopsy which will be performed at the beginning and then repeated once. An additional 12-month evaluation is obtained when possible.

Sampling: Consecutive eligible NIAID study subjects were recruited for participation in this NINR protocol if they met the eligibility criteria which were as follows: enrolled in an NIAID protocol; recent treatment with zidovudine, ddI, ddC or interferon-alpha for a minimum of four months with the last dose within 7 days prior to enrollment; presence of myopathy established according to selected clinical criteria that involve specific physical examination, muscle weakness history, or laboratory findings in order to operationally define the expert clinical judgement usually required in diagnosing myopathy. Detailed major and minor entry criteria are specified. Exclusion criteria included: illicit drugs, neurologic diseases or endocrine conditions that would complicate evaluation of the study variables; exposure to known myotoxins; family history of muscle diseases; severe malnutrition; eosinophilia greater than 20% on two sequential determinations at least one month apart.

Measurement: Study measures included:

- Complete History and Physical Examination by a consulting neurologist prior to study entry.
- Screening ANA, Rheumatoid factor, thyroid function, and HTLV-1 studies performed at study entry to rule out known competing causes of rheumatologic, endocrine, or viral myopathies.
- Laboratory studies: performed at baseline and monthly, consist of CBC; differential; Acute Care, Hepatic, and Mineral Panels; CK; LDH; aldolase; lactate; and urinalysis. These are repeated again at month 12.
- Clinical performance (manual muscle strength testing); functional status assessment (timed muscle activities, functional grade); and health status assessment (questionnaire) are obtained at baseline and monthly intervals and repeated again at month 12.
- Outpatient muscle biopsy of a proximal muscle is performed under local anesthesia at baseline and repeated once at month 4-6.

Major Findings and Report of Activities:
The study was initially designed to evaluate 15 patients for 6 months. In December 1991, an amendment was approved to increase the number of patients to 25; include each patient's immune profile as a study parameter when the 2 muscle biopsies are obtained; and expand the 15-item questionnaire to include condition-specific items as well as general health status items in order to distinguish health perceptions/health status in general from those that are condition-specific or related to myopathy. In October 1992, the request was approved to enroll up to a maximum of 10 additional subjects in order to have a total of 25 evaluable subjects who have completed all study parameters; and add one additional study visit twelve months after beginning the study.

Early findings or observations include: 1) Prolonged low dose, as well as high dose, AZT therapy may precede mitochondrial myopathy; 2) Discontinuation of AZT may improve mitochondrial myopathy and functional status, although in some instances myopathy remains stable or improves while continuing AZT; and 3) Clinical characteristics and muscle histology do not always correlate. For example, some patients who perform well clinically have severe mitochondrial myopathy on biopsy.

Significance of Research for Biomedical Research & the Program of the NINR:
Greater awareness of the natural history of antiretroviral-associated myopathy as well as the response to clinically determined interventions for antiretroviral-associated myopathy will contribute to improved clinical management of this condition, which is occurring more commonly as HIV infected individuals survive longer. This study will also provide information regarding how closely the clinical picture of this condition correlates with histologic and biochemical changes.

Proposed Future Course:
Data collection will proceed until all 25 evaluable subjects have been accrued for the 12- month duration of the study. Analysis of data for the first six months of observations is underway.

Publications:
Hench K, Jay C, Grady C, Ropka M. Prospective study of myopathy during prolonged antiretroviral therapy: A clinical nursing investigation. 27th annual meeting of the US Public Health Service Professional Association, 1992;83.

Cupler E, Danon M, Jay C, Ropka M, Hench K, Dalakas M. The early histological abnormalities of subclinical AZT-Myopathy (AZT-MY). Neurology, 1993;43:A373.

Jay C, Hench K, Ropka M, Danon M, Falloon J, Dalakas M. Improvement of AZT myopathy after change to dideoxyinosine (ddI) or dideoxycytidine (ddC). Neurology, 1993;43:A374.

Hench K, Cupler E, Jay C, Anderson R, Ropka M. Health perceptions, functional status and myopathic clinical findings in HIV: Correlations during prolonged antiretroviral therapy. 28th annual meeting of the US Public Health Service Professional Association, 1993;80.

Related Presentations:
"Prospective Study of Myopathy During Prolonged Antiretroviral Therapy: A Clinical Nursing Investigation", Presentation at the 27th Annual Meeting of the US Public Health Service Professional Association, Cincinnati, OH, 1992.

"Health Perceptions, Functional Status and Myopathic Clinical Findings in HIV: Correlations During Prolonged Antiretroviral Therapy", Presentation at the 28th Annual Meeting of the US Public Health Service Professional Association, Scottsdale, AZ, 1993.

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER

Z01 NR00004-01 CTL

PERIOD COVERED

October 1, 1992 to September 30, 1993

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*

Urinary Continence Status and Treatment of Incontinence in Nursing Home Residents

PRINCIPAL INVESTIGATOR *(List other professional personnel below the Principal Investigator.) (Name, title, laboratory, and institute affiliation)*

PI: Mary H. Palmer, Staff Fellow, CTL, NINR

COOPERATING UNITS *(if any)*

National Institute on Aging, GRC, NIH, Baltimore, MD (B. Engel); The Johns Hopkins Geriatric Center, Baltimore, MD (A. Langford, A. Warwick, S. Denman)

LAB/BRANCH

Clinical Therapeutics Laboratory, NINR

SECTION

INSTITUTE AND LOCATION

NINR, NIH, Gerontology Research Center, Baltimore, MD 21224

TOTAL STAFF YEARS:	PROFESSIONAL:	OTHER:
	0.2	

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither

☐ (a1) Minors

☐ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

Urinary incontinence is prevalent in nursing homes. This project is designed to test the effectiveness of staff performance feedback in conjunction with behavioral treatment of incontinence.

Objectives:
To examine urinary continence status and to identify physiological and functional factors associated with continence and incontinence in elderly nursing home residents and to prospectively examine and compare the level of dryness of residents on a prompted voiding intervention to their baseline measurement.

Major Findings:
To date 23 subjects have been recruited into the study. Data collection is underway.

Publications:

McCormick KA, Palmer MH. Urinary incontinence in adults. Annu Rev Nurs Res 1992; 10:25-53.

Palmer MH, Bone LR, Fahey M, Mamon J, Steinwachs D. Detecting urinary incontinence in older adults during hospitalization. Appl Nurs Res 1992; 5(4):1-7.

Palmer MH. Urinary incontinence. In: Carrieri V, Lindsay A, West C, eds. Pathophysiological phenomena in nursing: Human responses to illness. Baltimore: WB Saunders, in press.

Ouslander JG, Palmer MH, German PS, Rovner B. Urinary incontinence in nursing home residents: Incidence, remission, and other associated factors. J Am Geriatr Soc, in press.

Title:
"Prospective Study of Urinary Continence Status and Treatment of Incontinence in Nursing Home Residents" (FSK-IRB90-07-27-01)

Principal Investigator:

Mary H. Palmer, PhD, RN, C	Staff Fellow/NINR

Other Investigators:

Bernard T. Engel, PhD	Chief, Laboratory of Behavioral Sciences/NIA
Susan Denman, MD	Medical Director/Johns Hopkins Geriatric Center
Anita Langford, MS, RN	Administrator/Johns Hopkins Geriatric Center
Anne Warwick, MS, RN	Director of Nursing/Johns Hopkins Geriatric Center

Major Aims:
The purposes of this study are to:

1.0 Examine urinary continence status and to identify physiological and functional factors associated with continence and incontinence in elderly nursing home residents.

2.0 Prospectively examine and compare the level of dryness of incontinent residents on a prompted voiding intervention to their baseline measures.

Methods Employed:
Design: Incontinent and continent nursing home residents aged 60 years and over are participating in this prospective descriptive study. After urinary chemistries and a specialized nursing assessment of physical and cognitive functioning, continent residents are being followed for six months to detect changes in continence status. Incontinent residents participate in a 26-week course of behavioral prompted voiding intervention carried out by the nursing staff. Dryness levels and staff compliance to the intervention are being measured.

Sampling: Convenience sampling includes individuals aged 60 years and over admitted to the nursing home within a year of initiating participation in the study.

Measurement: Baseline data are collected for all subjects on the following variables: age; marital status; previous living arrangements; gender; ADL status at admission to the facility and at admission to the study; Folstein MiniMental Examination Status at admission to the facility and at admission to the study; urinalysis; urine culture and sensitivity; urine pH; admission serum glucose, Na, K, creatinine, Cl, WBC, RBC, hemoglobin, and hemocrit; oral intake and urinary output; use of diuretics; urine specific gravity; frequency of bowel and bladder incontinence; ability to use toilet; presence of pelvic abnormalities; ability to initiate voiding; bladder capacity; post void residual; level of dryness; and current medications.

For subjects participating in the prompted voiding intervention, data are collected on weekdays from 8 am to 10 pm as to whether the individual is wet or dry and whether assistance to the bathroom is actually provided. Data regarding the subject's average dryness level and the staff compliance to the intervention are reported to supervisory staff on a weekly basis.

A medical record review is conducted on a monthly basis to detect changes in continence status in previously continent subjects.

Major Findings and Report of Activities:
To date, 17 women and 7 men have been enrolled; 29% are continent. No incident cases of incontinence have been detected among continent subjects. During the course of the study, 1 subject died, 1 subject was discharged from the facility, 1 subject withdrew from the study, and 1 subject received a permanent indwelling catheter. Twelve subjects are participating in the prompted voiding intervention. Data entry and analysis are currently underway. Preliminary analyses on 17 subjects have begun: average age is 78.4 years, 77% are women, 94% are Caucasian. The majority (75%) were widowed, divorced, or single. The average Folstein MiniMental Examination score is 21.5 (range 0 to 30), and average post void residual is 112 cc (< 50cc indicates adequate bladder emptying, > 200 cc indicates insufficient emptying).

Significance of Research for Biomedical Research & the Program of the NINR:
Incontinence is a prevalent and costly health problem which occurs with increasing frequency in aging. Effective nursing interventions are necessary to promote functional and cognitive functioning.

Proposed Future Course:
A total of 100 subjects will be recruited. Incident cases of incontinence will be re-evaluated, including another assessment of functional and cognitive functioning.

Publications:
McCormick KA, Palmer MH. Urinary incontinence in adults. Annu Rev Nurs Res 1992; 10:25-53.

Palmer MH, Bone LR, Fahey M, Mamon J, Steinwachs D. Detecting urinary incontinence in older adults during hospitalization. Appl Nurs Res 1992; 5(4):1-7.

Palmer MH. Urinary incontinence. In: Carrieri V, Lindsay A, West C, eds. Pathophysiological phenomena in nursing: Human responses to illness. Baltimore: WB Saunders, in press.

Ouslander JG, Palmer MH, German PS, Rovner B. Urinary incontinence in nursing home residents: Incidence, remission, and other associated factors. J Am Geriatr Soc, in press.

Related Presentations:

Palmer M, Bennett R, Marks J, McCormick K, Engel B. "Urinary Incontinence in Nursing Home Residents: Behavioral Nursing Interventions", Poster session. The Gerontological Society of America 1992 Annual Conference, Washington, DC, November 20, 1992.

Myers A, Lesnoff-Caravaglia G, Fernie G, Kimbro C, Owens B, Palmer M. (discussant) "Meeting the Challenge for Caregivers: Technological Interventions", Symposium. Gerontological Society of America 1992 Annual Conference, Washington, DC, November 20, 1992.

"Urinary Incontinence in Adults: Assessment and Treatment", Delaware Nurses Association, Georgetown, DE, February 23, 1993.

"Management of Urinary Incontinence", Health Care Financing Administration Advanced Quality of Care Surveyor Session, Baltimore, MD, May 4, 1993 and June 8, 1993.

"Urinary Incontinence in Adults: Models for Care", Alabama Nursing Home Association, Alabama, February 17 and 18 and March 8 and 9, 1993.

This project is also being reported by the National Institute on Aging as project number Z01 AG00072-07 LBS.

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER

Z01 NR00006-01 CTL

PERIOD COVERED

October 1, 1992 to September 30, 1993

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*

Role of Estrogen on Urinary Incontinence and Symptoms in Post-menopausal Women

PRINCIPAL INVESTIGATOR *(List other professional personnel below the Principal Investigator.) (Name, title, laboratory, and institute affiliation)*

PI: Mary H. Palmer, Staff Fellow, CTL, NINR

COOPERATING UNITS *(if any)*

National Institute on Aging, GRC, NIH, Baltimore, MD; The Johns Hopkins Medical Systems (D. Foster); Francis Scott Key Medical Center, Baltimore, MD (J. Marks).

LAB/BRANCH

Clinical Therapeutics Laboratory, NINR

SECTION

INSTITUTE AND LOCATION

NINR, NIH, Gerontology Research Center, Baltimore, MD 21224

TOTAL STAFF YEARS:	PROFESSIONAL:	OTHER:
	0.2	

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither

☐ (a1) Minors

☐ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

Incontinence and urinary symptoms of frequency and urgency are prevalent in post-menopausal women. This project is designed to evaluate the effectiveness of topical estrogen in the behavioral treatment of urinary symptoms and incontinence. The findings from this study are being validated by a study of 50 patients hospitalized for hip fracture at an urban community hospital.

Objectives:

To investigate the relationship among estrogen use, pelvic muscle exercise, and urinary symptoms in post-menopausal women and to investigate the effects of estrogen and pelvic muscle exercise on the frequency of incontinent episodes in post-menopausal women.

Major Findings:

Subject recruitment is underway. The study is in progress.

Publications:

None

Title:
"Role of Estrogen and Pelvic Muscle Exercise on Urinary Incontinence and Urinary Symptoms in Post-Menopausal Women" (NCN-93-02-09-01)

Principal Investigator:

Mary H. Palmer, PhD, RN, C	Staff Fellow/NINR

Other Investigators:

David Foster, MD	Director, Division of General Gynecology and Obstetrics/Johns Hopkins Medical Systems (JHUMS)
Jane Marks, RN, MS	Continence Nurse, Beacham Ambulatory Care Center/Francis Scott Key Medical Center (FSKMC)

Major Aims:
The purposes of this study are to investigate the:

1.0 Relationship among estrogen use, pelvic muscle exercise, and urinary symptoms in post-menopausal women.

2.0 Effects of estrogen and pelvic muscle exercise on the frequency of incontinent episodes in post-menopausal women.

Methods Employed:
Design: This is a randomized, double blinded trial with three intervention groups and one control group. Community dwelling women aged 60 years and older will be randomly assigned to one of four groups: pelvic muscle exercise (PME) alone, topical estrogen alone, both in combination, or control.

Sampling: Women will be recruited from the gynecology and urology clinics of Johns Hopkins Medical Systems or the Francis Scott Key Medical Center.

Measurement: Data will be collected on the following variables: age; marital status; living arrangements; medical diagnoses and conditions; parity history; pelvic muscle strength; pelvic sensation; vaginal atrophy index; cytologic maturational indices; bulbocavernosus reflex; frequency of incontinence and controlled voiding; ability to initiate voiding; bladder capacity; post void residual; presence of urgency symptoms; urinalysis; urine culture; urine pH; serum electrolytes; T3; T4; enzymes; serum estrone and estradiol; voided volumes; perineal pad weights; oral intake; and current medications.

Major Findings and Report of Activities:
Subject recruitment is underway.

Significance of Research for Biomedical Research & the Program of the NINR:
AHCPR recommends investigation of the efficacy of combined therapies in the treatment of urinary incontinence. Optimization of the physiological environment to enhance behavioral interventions for urinary incontinence warrants nursing investigation.

Proposed Future Course:
Sixty community dwelling women will be recruited to participate in the study. Women assigned to the control group (no PME nor estrogen) will be offered 3 pelvic muscle exercise sessions at the completion of the study.

Publications:
None

Related Presentations:
None.

Laboratory for the Study of Human Responses to Health and Illness
Table of Contents

Summary of the Laboratory Chief

Summary of Individual Project Reports

Project Number 1: Caregiving, Health, and Quality of Life if Elderly Caregivers and Potential Caregivers of Persons with Dementia

Background: The Honolulu Heart Program (HHP) is a prospective study of coronary artery disease and stroke in American men of Japanese ancestry born in 1900 to 1919 and residing on the island of Oahu in 1965. It is currently the largest epidemiologic study of a minority in the United States, involving one of the longest living populations in the world. The study was established by the National Heart, Lung, and Blood Institute (NHLBI). The National Institute of Aging is currently funding and directing research on dementia in the HHP. The research involves identification of rates and risk factors for Alzheimer's Disease and vascular dementia.

The National Institute of Nursing Research Division of Intramural Research has initiated a research project which focuses on caregivers and potential caregivers of the participants in the aging component of the HHP. The project involves identification of predictors and consequences of caregiver burden and quality of life of elderly persons diagnosed with dementia. The sample for the longitudinal caregiver project is identified by the Aging Study of the HHP.

Rationale for Project: The total annual cost to the Nation for the care of AD patients is estimated at $90 billion, including medical and nursing home care, social services, lost productivity, and early death. The toll of caring for AD patients must also be calculated in terms of the burden on families and caregivers. The average duration of AD is 8 years, with more than 70 percent of patients with less severe disease cared for at home at an annual cost of $12,000 each. The cost of nursing home care is more than double this figure, and most patients eventually spend some time in nursing homes. In addition, patients may be repeatedly hospitalized during the course of their illness, at greatly increased cost. The burden is not solely financial; caregivers, and family members may suffer from isolation, depression, exhaustion, and increased health problems, as well as financial strain.

Caregivers are more than likely older women, either spouses or aging daughters, also known as "women in the middle" because they are caught between caring for an elderly parent and their own families and jobs. Research has documented significant physical and psychological consequences for caregivers. While the evidence points to significant consequences for the caregiver, most of the reported studies suffer from many conceptual and methodological flaws. In addition little consistency has been noted in studies addressing caregiver burden and its consequences, limiting comparison across studies. Some of the major limitations that have been documented are sampling bias, lack of comparison groups, lack of longitudinal studies, measurement error, and conceptual errors.

The documented limitations have been addressed in the current research. First, a theoretical model was developed based on prior research on caregiving, caregiver burden and consequences of caregiving. The design included a control group of elderly couples. The longitudinal design follows both the caregiver group and the control group at regular intervals over a two year time period. All of the concepts are measured with questionnaires that have been used in prior research and have documented psychometric

properties. In addition, reliability and validity estimates will be performed on the scales for both groups prior to any analyses of the theoretical model. A stratified random sampling procedure has been employed by NIA to obtain subjects for both the caregiver and comparison groups, with a minimum sample size of N = 100 in each group. Precise definitions have been established a priori.

The study design addresses another weakness that has not received attention in prior studies of caregivers. The caregiver literature is full of reported studies that focus on the caregiver without any reference to the recipients of care, other than their diagnosis. Objective as well as subjective evidence of changes in the recipient of care are being documented in collaboration with the Dementia Study. The data will be analyzed in relation to the care recipient's health behavior and health care utilization. In addition the psychological consequences as well as the physical consequences of caregiving will be examined. Thus, the caregiver - care recipient dyad is being followed and changes that occur over time in both members of the dyad are currently documented.

In spite of the fact that dementia is a major growing health and social problem as well as a major emotional and financial burden on families, little information is available in the types and patterns of caregiving, types and patterns of health care services used, and the costs of care. The current research documents changes in caregivers as well as demented participants over time. In addition the ability of elderly women and/or working daughters or sons to provide long term care, and the types of interventions and services that facilitate elderly women or working persons to care for a demented loved one are being identified. The research also monitors the health service use of the caregiver and participant.

The measurement of functional outcomes provide information on the functional performance of the caregiver over the illness trajectory of the demented elder. Information about the caregiver's functional status will provide knowledge on the caregiver's ability to care for a demented loved one over the course of the illness. In addition the information will provide valuable information on changes in functional performance in a group of elderly minority women.

Project Number 2: A Study of Quality of Life in Persons with HIV Disease

Background: In the majority of cases individuals infected with HIV Disease will live with their condition well over a decade. Data suggest there are usually 12 or more years of infection with identifiable stages. Survival is likely to become even more prolonged as advances in antiviral therapy are made available, control of presenting opportunistic infections improve, and early medical interventions occur. For these reasons, HIV Disease is now conceptualized as a chronic illness, a disease for which cure is currently impossible, but death is a distant eventuality. In these circumstances, the goal of care is expanded to include optimizing the patient's quality of life. When survival rates are not changed with treatments or differences between treatments are not dramatic, treatment effectiveness needs to be evaluated in quality of life terms: improvements in daily activities, morale, social role functions, and cost benefit ratios.

Rationale for Project: HIV Disease as a chronic illness affects all aspects of a patient's life. Persons are faced with fears of unknown illnesses, unknown treatments, unlikely cure, and premature death. They may experience separation from family and friends, the loss of major roles, permanent changes in appearance or in bodily functions, assaults on self image and self-esteem, distressing feelings of anxiety, guilt, anger or helplessness, and an uncertain unpredictable future. Patients are confronted with learning

to manage the long term problems of the disease such as potential limitations in physical abilities, appearance, and lifestyle, opportunistic infections, cancers, pain, psychiatric disorders, and decreased cognitive functioning. Quality of life is dependent on learning to manage the physical, psychological, and social costs of the illness.

Potential benefits for a study which focuses on predictors of quality of life beyond the current study include the identification of significant factors that either enhance or detract from the quality of life of persons living with HIV Disease. Once these predictors are identified, therapeutic interventions can be developed and implemented to facilitate successful adjustment to living with an illness with a downward trajectory.

The purpose of this research is to describe the quality of life of persons with HIV Disease and the predictors/correlates of quality of life in these persons. A Quality of Life Model for Persons with HIV Disease will be tested to describe the predictors/correlates of quality of life over the progression of the disease. The anticipated outcome is identification of a set of variables that contribute to quality of life for persons with HIV Disease.

An exploratory/descriptive longitudinal design has been implemented to identify and describe predictors of quality of life and changes in these predictors over the progression of the disease. The study will be conducted in three phases: In Phase 1 a grounded theory approach will be implemented within an exploratory design. Phase 2 will incorporate focus groups to validate the information obtained in Phase 1 as well as the other concepts in the Quality of Life Model. In Phase 3 the Quality of Life Model will be tested within a descriptive design.

Other Activities

In addition to the above two projects in progress, the functional status concept is currently under exploration by the Senior Staff Fellow in the HRHI. To date, a literature review has been done to critique the current definitions and measures of functional status. In addition, secondary analysis of data collected in a prior study funded by the American Lung Association has been conducted to assess the value of functional ability in predicting trajectory of illness. This review and secondary analysis will form the basis for clarifying the definition and measurement of functional status in chronic illness, and testing interventions to improve the functional status in persons with chronic pulmonary disease.

Relationship of Studies to Goals of Laboratory

The HRHI Laboratory conducts a program of research which focuses on biophysiologic and behavioral aspects of human responses that occur in health and illness, including biophysiologic and behavioral processes that influence health related quality of life outcomes in illness or disability; processes and environments that influence health, health promoting and health-maintaining behaviors; interventions that reduce the risk of illness as well as minimize impairments or complications that result from disease, health conditions, or injuries; and interventions that facilitate adaptation to illness or disability.

Both studies currently underway in the HRHI Laboratory focus on biophysiologic and behavioral processes that influence health-related quality of life. The quality of life concept is a major outcome variable which is incorporated in all studies in the laboratory. Investigators in the HRHI Laboratory will explore the construct in depth to clarify the definition and dimensions of quality of life that need to be included to facilitate comparison of findings across studies and populations. For example, the differences and similarities in the quality of life and functional status concepts must be made explicit, and the two constructs must be either combined or clarified as separate concepts. Additional attention will be paid to the reliability, validity, sensitivity, and scoring issues of instruments used to measure the dimensions of quality of life.

In both of the above studies, a causal model has been proposed to test which factors may be significant predictors of quality of life and health status in persons with a chronic illness or caregivers of persons with a chronic illness. Many of the concepts and measures are similar in the two studies to enable the investigators to compare findings across the two projects. Causal models must be formulated and tested prior to intervention studies to assist investigators in determining the significant predictors to target in intervention studies.

As the quality of life and health/functional status constructs are clarified and significant predictors of these constructs are identified and described, the focus of the laboratory will progress to developing and testing interventions to improve the quality of life of persons living with chronic illnesses as well as their caregivers.

Administrative Changes

Three administrative changes were implemented this past year. First, space for the two laboratories became physically separated, enabling each laboratory to become more autonomous. Although the two laboratories are still located in Building 31, the non-adjoining space has allowed the investigators more solitude and physical space.

Second, the budget process has been revised to enable the laboratories to operate under separate CAN structures. The change will enable the two laboratories to operate independently from a fiscal standpoint.

Last, guidelines have been formally written to outline procedures for manuscript review, proposal review and human subjects approval within NINR. The formal guidelines will facilitate new investigators in the review and approval processes.

All of these changes provide evidence of progress in the laboratory's development over the past year. The laboratory chief was formally appointed in June 1992, so the history of the laboratory is short. However, the stability of the laboratory is such that the aim of building nursing science is becoming a reality.

Program Plans

Four critical strategies guide the major objective of the laboratory: to incorporate a biobehavioral approach in developing and testing theory to guide nursing interventions.

First, the program plan calls for all proposals to be designed to incorporate the interaction of biological and behavioral factors in health promotion/risk reduction and in chronic illness. Multiple measures of behavioral oriented concepts will ensure that valid and sensitive data are obtained. A multiple indicator approach will be given high priority in which both behavioral measures as well as physiologic measures will be used to measure the concepts of interest. The HRHI Laboratory is an ideal site in which to test protocols which measure biobehavioral processes and outcomes because of access to study populations at NIH. All patients at NIH are enrolled in research protocols which include biological measures. Collegial research efforts will insure rigorous NINR investigations without redundant measures and costs.

Theory building strategies will be undertaken to develop theory that can be used to guide patient care decisions in nursing practice, just as physiological theories guide both nursing and medical practice. In the HRHI laboratory nursing theories that have been previously developed and tested by the investigators, as well as new theories generated from qualitative investigations will provide the basis for developing and testing nursing interventions.

Issues related to the measurement of theoretical constructs will be the third focus of studies conducted within the laboratory. Strict attention will be given to reliability, validity, sensitivity, specificity and generalizability of measures across studies in the laboratory. Well developed and tested instruments will be shared with scientists in the both the intramural and extramural research community so common instruments with sound theoretical and psychometric properties can be used in studies which measure the biobehavioral outcomes of interventions. Such measures will enable investigators to compare findings across studies and populations.

Measurement of patient outcomes is another essential component for studies in the laboratory. Such outcome measures will incorporate both biological and behavioral endpoints as appropriate. Currently all protocols incorporate measures of quality of life and health status outcomes.

Partnerships with other disciplines and institutes is fundamental to successful research efforts undertaken by the HRHI laboratory at NIH. Multidiscliplinary multi-institute cooperation will provide expertise, decrease subject burden, and reduce study costs. In addition, the collegial exchange will enhance creativity, improve communication, and ultimately ensure high standards of research.

Men and women of all ages will be recruited as subjects. Populations will include both individuals and families. Gender comparisons will be conducted whenever possible or appropriate. Contracting with sites outside of NIH may be necessary to test protocols on minority populations that may not be assessable at NIH or to obtain sufficient sample sizes for investigations. The Clinical Center will serve as an initial site to develop, test, and refine protocols, followed by off-site data collection.

Currently, quality of life is the major thematic area under investigation in the laboratory. The construct is under study in both patients with a chronic illness as well as caregivers of persons with a chronic illness. Predictor concepts across studies include social support, control, coping, and functional

performance. Other predictor factors which promote successful adjustment to a chronic illness and improve the quality of life of individuals and their caregivers will continue to be the priority.

Honors and Awards

Dr. Murdaugh, Chief, HRHI was invited to present three keynote addresses at regional and national research meetings. She was invited to present one of two state of the science papers at the 26th Annual Western Society for Research in Nursing Meeting in Seattle in April. She also presented the keynote address at the 3rd Annual Nursing Research Conference, University of Hawaii in Honolulu in April, 1993. Last, she presented a keynote address at the 66th Annual Los Angeles Heart Association Symposium in September, 1993.

Dr. Murdaugh received the Katherine A Lembright Award for Excellence in Cardiovascular Nursing Research, from the Council on Cardiovascular Nursing, American Heart Association. The award was presented at the 52nd Annual Scientific Sessions in New Orleans, in November, 1992.

Dr. Murdaugh was appointed adjunct professor in the School of Nursing, The Johns Hopkins University, in January, 1993.

Abstracts, Publications, Presentations

Abstracts:

Hinshaw AS, Murdaugh CL. Sensitive Measures of Clinical Phenomena. Sixth International Sigma Theta Tau Nursing Research Congress, June 1993, Madrid, Spain.

Murdaugh CL, Hinshaw AS. Generating Clinical Instruments using Magnitude Estimation: A Cross Modality Approach. Sixth International Sigma Theta Tau Nursing Research Congress, June 1993, Madrid, Spain.

Parsons M, Murdaugh CL. Enhancing professional practice by restructuring patient care. Sixth International Sigma Theta Tau Nursing Research Congress, June 1993, Madrid, Spain.

Kadohiro JK, Trockman CL, Murdaugh CL, White L, Petrovich H, Curb JD. Adapting Instruments for cross cultural research: Lessons Learned in Honolulu Aging and Caregiver study. 3rd Annual Nursing Research Conference, University of Hawaii, Honolulu, April 24, 1993.

Publications:

Fleury J, Murdaugh C. Coronary Artery Disease. In: Clochesy J, Cardin S, Rudy E, Whitaker A, eds. Critical care nursing, Sanders, 1992.

Milton D, Verran J, Murdaugh C, Gerber R. Differentiated group professional practice in nursing: A demonstration model. Nursing Clinics of North America, 1992;27:23-30.

Murdaugh C. The Person with Coronary Artery Disease and risk factors. In: Guzetta C, Dossey B, eds. Cardiovascular nursing: Holistic practice, Mosby, 1992;197-220.

Murdaugh CL Women and cardiovascular disease: State of the science. Scholarship in Practice, Boulder, CO: WIN;26:81-90.

Ozbolt J, Kline Leidy N, Darling-Fisher C, Pfoutz S. A taxonomy of nursing's research knowledge. In: Germain CP, ed. Nursing research taxonomies. Kansas City, MO: The American Nurses' Association.

Haase J, Leidy N, Coward D, Britt T, Penn P. Simultaneous concept analysis: A strategy for developing multiple interrelated concepts. In: Rodgers BL, Knafl KA, eds. Concept development in nursing: Foundations, techniques, and applications. Orlando, FL: WB Saunders.

Presentations:

Murdaugh CL. "Recruitment of women and minorities in research", American Heart Association 52nd Annual Scientific Sessions, New Orleans, LA, November 16, 1992. (Symposium: Recruitment Issues in Research: Problems and Solutions)

Murdaugh CL. "On becoming a nurse scientist: Lessons I have learned", Kathryn A. Lembright Lecture, American Heart Association, 52th Annual Scientific Sessions, New Orleans, LA, November 17, 1992.

Murdaugh CL. "Women and cardiovascular disease: State of the science", 26th Annual Western Society for Research in Nursing, Seattle, April 30, 1993 (One of two invited state of the science papers).

Murdaugh CL. "Developing nursing science: the National Center for Nursing Research", 3rd Annual Nursing Research Conference, University of Hawaii, Honolulu, April 24, 1993 (Invited Keynote).

Posters:

Leidy NK. "Psychophysiologic predictors of functional ability in people with chronic obstructive pulmonary disease", Poster, NIH Research Festival, September 20, 1993, Bethesda, MD.

Carolyn L. Murdaugh, PhD, RN

Individual Project Reports

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER

Z01 NR00003-03 HRHI

PERIOD COVERED

October 1, 1992 to September 30, 1993

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*

Burden, Quality of Life of Elderly Caregivers in Alzheimer's Disease (N01-HC-05102)

PRINCIPAL INVESTIGATOR *(List other professional personnel below the Principal Investigator.) (Name, title, laboratory, and institute affiliation)*

Carolyn L. Murdaugh Contract Federal Advisor
Chief, Laboratory for the Study of Human Response to Health and Illness (HRHI)

COOPERATING UNITS *(if any)*

NINR; NHLBI (Honolulu Heart Program) with Kuakini Medical Center, Honolulu, HI; NIA

LAB/BRANCH

Laboratory for the Study of Human Response to Health and Illness (HRHI)

SECTION

INSTITUTE AND LOCATION

NINR, NIH; Building 31, Room 5B25; 9000 Rockville Pike; Bethesda, MD 20892

TOTAL STAFF YEARS:	PROFESSIONAL:	OTHER:
1.0	1.0	Contract

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither
☐ (a1) Minors
☒ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

The total cost to the Nation for the care of AD patients is estimated at $90 billion, including medical and nursing home care, social services, lost productivity, and early death. The burden is not solely financial; caregivers and family members may suffer from isolation, depression, exhaustion, and increased health problems, as well as financial strain.

In spite of the fact that dementia is a major growing health and social problem as well as a major emotional and financial burden on families, little information is available in the types and patterns of caregiving, types and patterns of health care services use, and the costs of care. In addition, the ability of elderly women and/or working daughters or sons to provide long term care, and the types of interventions and services that facilitate elderly women or working persons to care for a demented loved one have not been adequately identified.

The purpose of this study is to describe predictors of caregiver burden and quality of life in elderly caregivers of persons with Alzheimer's Disease (AD) in the Honolulu Asian Aging Study of the Honolulu Heart Program. The caregivers are elderly spouses or siblings of Japanese American men between the ages of 70 and 90 who have been diagnosed with dementia.

In a longitudinal study, 200 caregivers of persons with AD and 200 spouses of a control group are participating in both face to face and telephone interviews every three months for two years. Information collected about the caregiver includes demographic data, acculturation, perceived control, social networks, social support, health status, health service use, burden, coping strategies, depression, functional status, life satisfaction, and social well-being. Information collected about the demented person includes driving behaviors, self-care behaviors, health status, health service use, and progression of dementia behaviors. Data collection has been underway since March 31, 1992 and will continue until December 1994. Analysis of baseline data is underway.

Title:
"Caregiving, Health, and Quality of Life of Elderly Caregivers and Potential Caregivers of Persons with Dementia" (N01-HC-05102)

Principal Investigator:
Carolyn L. Murdaugh, PhD, RN Contract Federal Advisor
Chief/HRHI, NINR

Other Investigators:
Lon White, NIA; Webb Ross, Honolulu VA; Jane Kadohiro, University of Hawaii; Carol Trockman, Kuakini Medical Center; Helen Petrovich, Kuakini Medical Center; Kamal Masaki, Kuakini Medical Center; David Curb, University of Hawaii

Major Aims:
1. Describe the major predictors (demographic factors, cognitive status, acculturation, perceived control, coping strategies, family network, social support) of caregiver burden and its consequences (changes in functional performance, health care use and quality of life measures of social well being, emotional well being and life satisfaction) in caregivers of elderly men with dementia and significant others of elderly men with normal cognitive function.
2. Describe changes in predictors and consequences of caregiver burden and quality of life over the course of the dementing illness.
3. Describe the relationship between dementia behaviors of the elder and caregiver consequences over the course of the dementing illness.
4. Describe the caregiver and elder predictors of institutionalization of the demented elder.
5. Describe the caregiver consequences (changes in health status, quality of life) of institutionalization of the demented elder.

Methods:
A descriptive longitudinal design has been implemented comparing caregivers of a demented group and significant others of a non-demented comparison group at baseline and every three months for two years.

All caregivers (CG) and significant others (SO) of elders who have been randomly selected from a sample of study participants who have been stratified on cognitive assessment score, age and education. A projected sample size is N=150 for the demented group of CG and N=150 for the comparison group of SO.

Measures include the Blessed Dementia Scale, IQCode, Behavior Problem Checklist, Driving Behaviors Questionnaire, Social Network Scale, Social Support Scale, Family Network Scale, Perceived Control Index, Revised Ways of Coping Scale, Caregiver Burden Index, Depression, Social Participation Scale, Life Satisfaction Scale, Functional Status Questionnaire, Health Services Use Questionnaire, Sleep Questions, Leisure Activities Questionnaire. In addition data collected on the demented or control elder in the Aging and Dementia examination are accessible.

All CG and SO are followed via telephone interviews every three months for two years following a baseline clinic visit for a face to face interview. In addition the CG of the demented elder receives a home visit prior to implementing the 3 month telephone follow up calls. Data on both the CG/SO and the demented or control elder are obtained.

Progress to Date:
Data collection was initiated May, 1993, and will continue until December 1995 in order to complete the longitudinal component. As of August 1, 1993, a total of N=447 potential CG/SO have completed the initial baseline clinic visit. (The potential CG/SO attends the clinic with the elder who is undergoes an initial screening examination for dementia.) A total of N=95 have been referred to the demented group, and N=152 have been referred to the control group. The group sizes will in all likelihood be similar as data collection progresses.

Significance:
The caregiving study addresses critical questions related to caregiving and quality of life of adults who care for person with a debilitating chronic illness. The information gained will enable investigators to develop and test interventions to decrease burden and improve the health and quality of life for elderly female caregivers.

Proposed Course:
The study will be replicated in collaboration with the Aging and Dementia replication study, beginning in June, 1994. In the replication study proposed extensions include a detailed physical assessment of function performance and health status indicators, and a bereavement follow up for persons whose elder dies during the course of the study.

Publications to date:
None, as data collection is in progress. Data analysis of the baseline clinic interview data will be initiated in October, 1993.

This study is being conducted through an intra-agency agreement with the National Heart, Lung, and Blood Institute (NHLBI). The NHLBI has a contract with Kuakini Medical Center, Honolulu, Hawaii for the Honolulu Heart Program and the Honolulu Aging Study.

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE

NOTICE OF INTRAMURAL RESEARCH PROJECT

PROJECT NUMBER

Z01 NR00007-01 HRHI

PERIOD COVERED

October 1, 1992 to September 30, 1993

TITLE OF PROJECT *(80 characters or less. Title must fit on one line between the borders.)*

A Study of Quality of Life in Persons with HIV Disease (93-I-0147)

PRINCIPAL INVESTIGATOR *(List other professional personnel below the Principal Investigator.) (Name, title, laboratory, and institute affiliation)*

PI: Carolyn L. Murdaugh Chief, HRHI, NINR

Others: Mary E. Ropka Associate Director for Intramural Research, NINR
Christine Grady Research Associate, CTL, NINR
Nancy Kline Leidy Senior Staff Fellow, HRHI, NINR
Sakineh Walther, RN, Research Nurse, HRHI, NINR

COOPERATING UNITS *(if any)*

NIH Clinical Center Nursing Department (B. Barrick, L. Govoni)
NIAID

LAB/BRANCH

Laboratory for the Study of Human Response to Health and Illness (HRHI)

SECTION

INSTITUTE AND LOCATION

NINR, NIH; Building 31, Room 5B25; 9000 Rockville Pike; Bethesda, MD 20892

TOTAL STAFF YEARS:	PROFESSIONAL:	OTHER:
1.0	1.0	1.0

CHECK APPROPRIATE BOX(ES)

☒ (a) Human subjects ☐ (b) Human tissues ☐ (c) Neither
☐ (a1) Minors
☒ (a2) Interviews

SUMMARY OF WORK *(Use standard unreduced type. Do not exceed the space provided.)*

Individuals infected with HIV disease will live with their condition well over a decade. Survival is likely to become even more prolonged as advances in antiviral therapy are made available, preventing opportunistic infections improve, and early medical interventions occur. For these reasons, HIV Disease is now considered a chronic illness, a disease for which cure is currently impossible, but death is distant eventuality. In these circumstances the goal of care is expanded to include optimizing the patient's quality of life.

HIV Disease is a complex disease that has profound physical and psychosocial consequences upon persons with HIV, their loved ones, and caregivers. The stresses and losses associated with HIV Disease are profound and are often compounded by societal stigmatization. Persons with HIV Disease face multiple adaptive challenges in their daily living patterns as well as in their interactions with the health care system. The success with which they meet these challenges may influence the progression of the disease and the quality of their lives.

The purpose of this research is to identify factors which enable persons with HIV Disease to successfully cope with their chronic illness and achieve a higher quality of life in spite of a progressive downhill trajectory. Adult subjects who have been diagnosed with HIV Disease and participating in a drug treatment protocol are being recruited to participate in one to one interviews. A Quality of Life Model for Persons with HIV Disease will be tested to describe the predictors/correlates of quality of life over the progression of the disease.

A longitudinal design has been implemented to identify and describe predictors of quality of life and changes in these predictors over the progression of the disease. The study will be conducted in three phases: In Phase 1, which is currently underway, a grounded theory approach has been implemented within an exploratory design. Phase 2 will incorporate focus groups to clarify and validate the information obtained in Phase 1 as well as the other concepts in the Quality of Life Model. In Phase 3 the Quality of Life Model will be tested within a longitudinal design in which subjects are assessed at baseline, six months, and one year.

Title: "A Study of Quality of Life in Persons with HIV Disease" (#93-I-0147)

Principal Investigator:

Carolyn L. Murdaugh, PhD, RN	Chief/HRHI, NINR

Others Investigators:

Mary E. Ropka, PhD, RN	Associate Director for Intramural Research/NINR
Christine Grady, MS, RN	Research Associate/NINR
Nancy Kline Leidy, PhD, RN	Senior Staff Fellow/NINR
Bill Barrick, MS, RN	Head Nurse, 8th Floor Clinic/CCND
Laura Govoni, MS, RN	Psychiatric Nurse Liaison, 8th Floor Clinic/CCND

Major Aims:

1. Identify the components of quality of life for person with HIV Disease.
2. Describe the variables in the Quality of Life Model in HIV Disease which are significant predictors of quality of life of persons with HIV Disease.
3. Describe changes in significant predictors of quality of life over the course/progression of the disease.
4. Describe the relationship of age, socio-economic background, and severity of illness on quality of life in persons with HIV Disease

Methods:

A three phased exploratory/descriptive longitudinal design is currently in process. In Phase I a grounded theory approach has been implemented within an exploratory design. Phase II incorporates focus groups to validate the information obtained in Phase I as well as the other concepts in the Quality of Life Model. In Phase III the Quality of Life Model will be tested within a descriptive design.

Subjects who are currently participating in selected NIAID protocols or have previously participated in such protocols are invited to participate. Inclusion criteria for all phases include a diagnosis of HIV Disease, age 18 or older, able to speak, and write and read English. Persons with AIDS dementia are excluded.

For Phase I, 12 subjects have been recruited. A minimum of 10 subjects had been proposed. For Phase II approximately 20 to 25 subjects will be recruited to participate. In Phase III a minimum of N=140 subjects are projected to be needed based on a subject to variable ratio of 10:1.

Measures: Open ended interviews are the method of obtaining data in Phase I. Interviews are audiotaped and transcribed work for word. Focus Groups will be the method of data collection for Phase II. The group discussions will be audiotaped and transcribed work for word. In Phase III paper and pencil questionnaires will be used to assess the following concepts. In addition, questionnaires that measure any new concepts identified in Phases I and II will be added.

Currently proposed predictor concepts to be measured include Symptom Distress, Functional Performance, Cognitive Status, Social Support, Unpredictability Management, Hope Maintenance, Finding Meaning, and Control. The dependent or outcome concept is quality of life, with multiple indicators, including emotional and social well being.

Major Findings/Report of Activities: (Progress to Date)
Subject accrual began in July, 1993, for Phase I, and N=12 subjects have been recruited as of September 1, 1993. Subject recruitment for Phase II began the week of September 20, 1993. All of the audiotapes from the interviews to date have been transcribed, and the data are analyzed concurrently as interviews are conducted, using the methods of constant comparative analysis. Preliminary findings will be available in October, 1993.

Significance:
A study which focuses on the quality of life of persons with HIV disease is a highly significant research topic. Factors that either enhance or detract from the quality of life of these persons will be identified. Once these factors are identified and described, therapeutic interventions can be developed and implemented to facilitate successful adjustment to living with an chronic illness that has a downward trajectory.

Proposed Course:
Plans are to replicate the study using minority women and men, as well as persons who have less education and a lower socioeconomic background than the current sample.

Publications and Related Presentations:
None to date as Phase I data collection is in progress.